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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,424	09/15/2005	Osamu Funahashi	MAT-8741US	9472

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RATNERPRESTIA
P.O. BOX 980
VALLEY FORGE, PA 19482

EXAMINER	
ELBIN, JESSE A	

ART UNIT	PAPER NUMBER
2615	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,424	FUNAHASHI, OSAMU	
	Examiner	Art Unit	
	JESSE A. ELBIN	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 September 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *15 September 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. Claims 1-3 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, and 3-4 of copending Application No. 10/549771 ('771) in view of Kiyotaka et al. (JP 08-1002993 ('993) (already of record)).

Instant Application (10/549424)	Application 10/549771
Claim 1:	**Claim 1:**
A loudspeaker comprising:	A loudspeaker comprising:
a frame;	a frame coupled to the magnetic circuit;
a magnetic circuit disposed inside the frame;	a magnetic circuit having an annular magnetic gap;
a voice coil unit disposed slidably with respect to a magnetic gap provided in the magnetic circuit;	a voice coil movably fitted into the magnetic gap;
a diaphragm coupled *to the voice coil unit directly or indirectly at its inner circumferential end part*	and a diaphragm coupled
and to the frame at its outer circumferential end part via a first edge;	to the frame at its periphery via a first edge, wherein
and a suspension holder coupled to a rear surface of the diaphragm and coupled to the frame at its one end via a second edge;	a suspension holder on a rear surface of the diaphragm is coupled to the frame via a second edge that is symmetric and similar to the first edge.

wherein an edge diameter in a cross section of the second edge is set to be larger than an edge diameter in a cross section of the first edge.	
Claim 2 dependent upon Claim 1 …wherein the first edge is allowed to bend downward and the second edge is allowed to bend upward.	**Claim 3 dependent upon Claim 1** …wherein the first edge extends downward and the roll of the second edge extends upward.
Claim 3 dependent upon Claim 1 …wherein the first edge is allowed to bend upward and the second edge is allowed to bend downward.	**Claim 4 dependent upon Claim 1** …wherein the first edge extends upward and the roll of the second edge extends downward.

The instant application does not teach a diaphragm coupled to the voice coil unit directly or indirectly at its inner circumferential end part; or an edge diameter in a cross section of the second edge is set to be larger than an edge diameter in a cross section of the first edge.

A diaphragm coupled to the voice coil unit at its inner circumferential end part is inherently covered to produce an enabling disclosure. The diaphragm in the instant application must be connected to the voice coil bobbin at an inner circumferential end part in order to produce vibrations from the diaphragm.

{Kiyotaka teaches an edge diameter in a cross section of the second edge ('993 Fig. 1 #2b) is set to be larger than an edge diameter in a cross section of the first edge ('993 Fig. 1 at #10).}

This is a provisional obviousness-type double patenting rejection.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 8 March, 2004. It is noted, however, that applicant has not filed a certified copy of the 2004-063525 application as required by 35 U.S.C. 119(b).

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claim 3 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

4. Figure 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funahashi et al. (US PGPub 2003/0185415 ('415)) in view of Kiyotaka et al. (JP 08-102993 ('993) (already of record)).

Regarding claim 1, Funahashi teaches a speaker (loudspeaker; '415 Title) comprising: a frame ('415 #19); a magnetic circuit ('415 #9) disposed inside the frame ('415 Fig. 7); a voice coil unit ('415 #15 and [0042] line 1) disposed slidably with respect to a magnetic gap ('415 #14) provided in the magnetic circuit ('415 #19); a diaphragm ('415 #17) coupled to the voice coil unit ('415 #15) directly or indirectly ('415 [0043] lines 2-3) at its inner peripheral part (circumferential end part; '415 [0043] lines 1-3 and Fig.

7) and to the frame (‘415 #19) at its outer circumferential end part via a first edge (‘415 #18 and [0044] lines 1-2); and a suspension holder (‘415 #20) coupled to a rear surface of the diaphragm (‘415 Fig. 7) and coupled to the frame (‘415 #19) at its one end via a second edge (‘415 [0044] lines 9-12).

Funahashi does not teach an edge diameter in a cross section of the second edge is set to be larger than an edge diameter in a cross section of the first edge.

In the same field of endeavor, Kiyotaka teaches an edge diameter in a cross section of the second edge (‘993 Fig. 1 #2b) is set to be larger than an edge diameter in a cross section of the first edge (‘993 Fig. 1 at #10) for the benefit of adjusting the damping characteristics according to design requirements.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the first or second edge as taught by Funahashi with the varied diameters as taught by Kiyotaka for the benefit of adjusting the damping characteristics according to design requirements.

Regarding claim 2, Funahashi and Kiyotaka remain as applied above.

Funahashi further teaches the first edge (‘415 Fig. 12 #29) is protruded toward the magnetic circuit (allowed to bend downward; ‘415 Fig. 12 and [0060] lines 7-8) and the second edge (‘415 Fig. 12 #30) is protruded toward the diaphragm (allowed to bend upward; ‘415 Fig. 12 and [0060] lines 8-9).

Regarding claim 3, Funahashi and Kiyotaka remain as applied above.

Funahashi further teaches the first edge ('415 Fig. 1 #18) is protruded toward an opposite side of the magnetic circuit (allowed to bend upward; '415 Fig. 1 and [0045] lines 1-2) and the second edge ('415 Fig. 1 #21) is protruded toward the magnetic circuit (allowed to bend downward; '415 Fig. 1 and [0045] lines 2-3).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Kreitmeier et al. (US PGPub 2004/0165746 A1) teaches a loudspeaker with damper edge portion positioned bending upward and downward. Further Kreitmeier teaches adjusting the stiffness of the damper to adjust damping and stiffness.

b. Weisman (US PGPub 2004/0218778 A1) teaches a loudspeaker with multiple dampers. The dampers edges illustrated have different cross-sectional diameters than the diaphragm edge for the benefit of allowing longer stroke of the diaphragm.

c. Kuze et al. (US PGPub 2002/0051558 A1) teaches a diaphragm surround facing toward the magnetic circuit as opposed to the more typical away from the magnetic circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSE A. ELBIN whose telephone number is (571)270-

3710. The examiner can normally be reached on Monday through Friday, 8:00am to 5:00pm EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. A. E./
Examiner, Art Unit 2615

/Sinh N Tran/
Supervisory Patent Examiner, Art Unit 2615